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Subject: Comments on the Preliminary Staff Assessment for the Proposed Carlsbad Energy Center Project, Carlsbad, California

The Carlsbad Energy Center Project (CECP) project is located on approximately 23 acres of the 95-acre existing Encina Power Station (EPS) in the City of Carlsbad in northern San Diego County. The proposed CECP will use high-efficiency, combined-cycle power generation units fueled by natural gas.

The proposed site is currently occupied by the EPS tank farm, which includes aboveground fuel oil Tanks 5, 6, and 7. As part of the proposed project, these three fuel oil tanks would be demolished and removed, and the soil underneath them would be remediated, as appropriate.

CECP construction is proposed to begin during the third quarter of 2009 and take 25 months to complete. Commercial operations are expected to begin in late summer, 2011.

We have reviewed the Preliminary Staff Assessment (PSA)¹ that was prepared by the California Energy Commission staff to evaluate the Application for Certification (AFC) for the CECP and we provide our comments below.

¹ Preliminary Staff Assessment for the Carlsbad Energy Center Project, Application For Certification (07-AFC-6), San Diego County. California Energy Commission. December 2008.
<http://www.energy.ca.gov/2008publications/CEC-700-2008-014/CEC-700-2008-014-PSA.PDF>

COMMENTS

1. **The PSA Does Not Address Potential Transport of Contaminated Soils via Stormwater Runoff and Does Not Offer Prevention Measures**

Soil contamination in the area of Tank No. 7 was detected and described in a project remediation report prepared in 2004 to document the cleanup of contaminated soils.² A 1998 Phase II Environmental Site Assessment identified eight locations at the Encina Power Plant where total extractable hydrocarbons (TEH) concentrations exceeded 1,000 mg/Kg.³ Two of these areas, labeled Area 5 and Area 6, were located adjacent to Tank No. 7: Area 5 was a paved area southwest of the tank and Area 6 was an unpaved area north of the tank.⁴ During November 2003, a total of 4,426 cubic yards of petroleum hydrocarbon-contaminated soil was excavated and removed from the Encina Power Plant, including 139 and 101 cubic yards from Areas 5 and 6 respectively.⁵ However, 12 cubic yards in Area 5 and 4 cubic yards in Area 6 were not removed due to physical limitations.⁶ Following excavation, soil samples were collected from the excavation bottoms and side walls.

Tank No. 7, along with Tank Nos. 5 and 6, are slated for demolition with removal of the soil from beneath and adjacent to the tanks. Excavation soil samples in Areas 5 and 6 in the vicinity of Tank No. 7 were reported to contain TEH at up to 3,030 mg/kg, well above a cleanup goal of 1,000 mg/kg.⁷ Not all soil could be excavated because the presence of a concrete ditch and an aboveground pipe which precluded further excavation. The 2004 report estimated approximately 16 cubic yards of TEH-contaminated soil to remain in areas that were inaccessible to excavation equipment at concentrations above the soil cleanup goal. The TEH-impacted soil may therefore serve as a source of contamination to groundwater and may pose a potential for contamination of stormwater runoff.

Additionally, soil from beneath Tanks 5, 6, and 7 is known to have been mixed with fuel oil for the purposes of preparing the foundation for the tanks (PSA, 4.13-10). Approximately 11,300 tons of soil from the area around tanks 5, 6, and 7 are estimated to be impacted by the soil/oil mixture (PSA, 4.13-10). The CEC PSA estimated tank demolition activities to generate 11,300 tons of waste soil (p. 4.13-11).

The PSA fails to identify the locations for the stockpiles of petroleum-impacted soils that are proposed to be excavated. A revised PSA should be prepared that would require measures to ensure contaminated soil will not be mobilized by stormwater runoff to drain offsite and toward surface water bodies, including Agua Hedionda Lagoon.

² Report on Encina Power Plant Remediation Project. Prepared by Haley and Aldrich, Inc. for San Diego Gas and Electric. April 28, 2004.

³ Ibid, p. 2.

⁴ Ibid, p. 7.

⁵ Ibid, Table 5.

⁶ Ibid, p. i

⁷ Ibid, pp. 12-13.

The Water Resources Section of the AFC does not mention the presence of the petroleum-impacted soils that remain beneath the Tanks 5, 6, and 7 and the soils that were inaccessible during excavation that are known to be TEH-contaminated. A construction storm water pollution prevention plan, included as Appendix 5.15C to the AFC, only states:

The project does not have the potential to discharge directly to a water body listed as impaired due to sedimentation/siltation and/or turbidity pursuant to Clean Water Act Section 303(d). All on-site pollutants have petroleum characteristics for visual monitoring. (p. 600-1).

The above statement is unsubstantiated and does not address the issue of stockpiled soils contaminated by petroleum hydrocarbons that may be mobilized by storm water runoff. The PSA should be revised to include measures to prevent petroleum hydrocarbons-contaminated soil to migrate offsite.

2. Potential Impact to Agua Hedionda Lagoon are Not Addressed in the PSA

The surface water body nearest to the site is Agua Hedionda Lagoon, located 300 feet to the north of Tank No. 7. The State of California has identified the Agua Hedionda Lagoon on the 303(d) list of water bodies that do not meet federal Clean Water Act water quality standards because of an impairment caused by sediment and siltation.⁸ Agua Hedionda Lagoon has existing beneficial uses of contact and non-contact water recreation, areas of special biological significance, marine and wildlife habitat, preservation of rare and endangered species, warm freshwater habitat, and has potential for beneficial use as an estuarine habitat.

The Water Resources Section (Section 5.15) of the AFC failed to acknowledge the impaired status under the federal Clean Water Act Section 303(d) of Agua Hedionda Lagoon. The 303(d)-listed status of Agua Hedionda Lagoon was not identified elsewhere in the AFC despite the fact that tank demolition activities are expected to generate approximately 3,800 tons of metal debris, 49,000 gallons of residual No. 6 fuel oil, and 11,300 tons of waste soil that may serve as a source of contamination.

Stormwater runoff during development of the site will utilize an existing storm water collection system which includes pumped collection sumps that feed an existing line which discharges to Agua Hedionda Lagoon. Runoff within the impoundment area currently enclosing Tanks 5, 6, and 7 is planned to be collected and pumped to an above-ground mobile oil/water separator and sand media filter for pretreatment prior to discharge to the Agua Hedionda Lagoon (PSA, p. 4.9-7).

⁸ 2006 CWA Section 303(d) List of Water Quality Limited Segments Requiring TMDLs. SAN DIEGO Regional Water Quality Control Board. Approved by USEPA June 28, 2007.
http://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/303dlists2006/epa/r9_06_303d_reqtmlds.pdf

Under provisions of State Water Resources Control Board Order No. 99-08-DWQ,⁹ all dischargers shall prepare and implement a storm water pollution prevention plan (SWPPP) prior to disturbing a site. A construction SWPPP, included as Appendix 5.15C to the AFC, does not evaluate the efficacy of the above-ground mobile oil/water separator and sand media filter treatment BMP (as identified above) in the removal of petroleum contaminants that are known to exist in the vicinity of Tank No. 7. The construction SWPPP does not specifically address stockpiling of petroleum-contaminated soils and the potential impact from runoff to Agua Hedionda Lagoon. The construction SWPPP only identifies generic BMPs in an appendix that includes materials downloaded from a website that have not been evaluated for effectiveness at the proposed project site for contaminants that are likely to be encountered.

The PSA failed to note this deficiency in the AFC. The PSA should be revised to require a SWPPP to include site-specific BMPs that would ensure protection of Agua Hedionda Lagoon from contamination via soil runoff.

An integrated approach that commits to use of the County of San Diego's Low Impact Development program (see the 2007 County of San Diego Low Impact Development Handbook¹⁰) should instead be used by the applicant to identify BMPs that together will ensure the greatest degree of contaminant reduction.

The Low Impact Development Handbook identifies numerous BMPs not considered by the applicant which are applicable to the proposed development, including:

- Infiltration trenches;
- Infiltration basins;
- Vegetated filter strips;
- Sand filters; and
- Bioretention systems.

3. An SPCC Plan Must be Documented in the PSA

The AFC states (p. 2.1):

Accidental leaks and discharges inside the power generating areas will be contained and disposed off-site in accordance with approved Spill Prevention, Control and Countermeasures (SPCC) Plans. SPCC plans must be prepared in accordance with the oil pollution prevention guidelines in the Federal Code of Regulations (40 CFR 112). These plans must include procedures, methods, and equipment at the facility to prevent discharges of petroleum from reaching navigable waters. SPCC plans must be

⁹ National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity (General Permit) Water Quality Order 99-08- DWQ. California State Water Quality Control Board.

http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/finalconstpermit.pdf

¹⁰ Low Impact Development Handbook: Stormwater Management Strategies. County of San Diego, Department of Planning and Land Use. December 31, 2007. <http://www.sdcountry.ca.gov/dplu/docs/LID-Handbook.pdf>

certified by a Registered Professional Engineer and a complete copy must be maintained on site. Specific requirements of the SPCC Plan can be found in 40 CFR section 112 or the California Health and Safety Code Chapter 6.67, section 25270 et seq.

The AFC does not state whether or not an SPCC plan has been prepared and approved for the proposed project. The PSA should be revised to include information about the existing SPCC plan, if one exists.

If an SPCC plan does not exist, the PSA should be revised to include a requirement that an SPCC plan be prepared with consideration to the demolition of Tanks 5, 6, and 7, as specified in the Federal Code of Regulations (40 CFR 112.5). Demolishing Tank Nos. 5, 6, and 7 would compromise the secondary containment, thus posing a risk of contaminant transport to neighboring surface water bodies.

Additionally, 40 CFR 112.5 requires owners and operators of facilities to amend the SPCC plan under certain circumstances, including “construction or demolition that might alter secondary containment structures.”¹¹ The amendment of the SPCC plan must be prepared within six months of the date of demolition. The PSA should be revised to document what the applicant has done to comply with this requirement.

None of the three tanks proposed for removal have been inspected by a regulatory agency representative.¹² The PSA does not reference the new Aboveground Petroleum Storage Act which requires inspections of tank facilities with an aggregate storage capacity of 10,000 gallons or more of petroleum at least every three years.¹³ The PSA should be revised to address the implications of the Aboveground Petroleum Storage Act on the proposed tank removal and to require that a regulatory inspection be conducted.

4. Tank Removal and Verification Sampling have Not been Addressed by the PSA

On July 15, 2008 Carlsbad Energy Center submitted a Fuel Oil Storage Tank Removal and Verification Sampling Work Plan at the Encina Power Station¹⁴ to the San Diego County Department of Environmental Health (SDCDEH). On August 5, 2008, SDCDEH approved the Work Plan¹⁵.

¹¹ Code of Federal Regulations Title 40 – Protection of Environment, Chapter I – Environmental Protection Agency, Subchapter D – Water Programs, Part 112 – Oil Pollution Prevention

<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&rgn=div5&view=text&node=40:21.0.1.1.7&idno=40>

¹² SDCDEH, January 8, 2009 phone conversation, Ms. Sande Pence.

¹³ Aboveground Petroleum Storage Act, Assembly Bill 1130 (Laird) Fact Sheet. California Department of Environmental Protection Unified Program. December 2007.

<http://www.calepa.ca.gov/CUPA/Aboveground/FactSheetAPSA.pdf>

¹⁴ Carlsbad Energy Center Project – Fuel Oil Storage Tank Removal and Verification Sampling Work Plan, Encina Power Station, Carlsbad California, Voluntary Assistance Program Case Number H13941-004. Prepared by SGI The Source Group. July 15, 2008.

¹⁵ Voluntary Assistance Program, File H13941-004, Cabrillo Power I, LLC. Letter from San Diego County Department of Environmental Health to NRG Energy, Inc. August 5, 2008.

An objective of the Work Plan (p. 1) was to “briefly describe general procedures for removal of tank bottoms, piping and associated foundations, and underlying contaminated soil (where applicable).” The Work Plan further stated (p. 1) that “the removal of Tanks 5, 6, and 7 are described in a separate work plan that will be submitted to the San Diego County Hazardous Materials Management Division.”

Section 2.0, Project Description, of the AFC states (p. 2):

Cabrillo Power I LLC is currently removing the existing fuel oil tanks and completing allowed general remediation of a portion of the East Tank Farm as part of ongoing operations and maintenance. Thus, CECP will begin with the fuel oil tanks removed and proceed to prepare the site for the power plant.

In an attempt to determine if the Tank demolition had begun, the SDCDEH was contacted but the agency was unaware of any demolition activities.¹⁶

The AFC does not clearly state the timeline for removal of Tanks 5, 6, and 7 and the PSA does not address the issue. The PSA should be revised to include specific information about the removal schedule and whether any removal that may have already been conducted would be in violation of the Federal Code of Regulations (40 CFR 112.5). Furthermore, neither the AFC nor the PSA mention a schedule for verification soil sampling in the vicinity of the tanks planned to be removed. The PSA should be revised to address the need for verification soil sampling provisions, the schedule for soil sampling and the process by which the results of the sampling would be reviewed and approved by the San Diego County Hazardous Materials Management Division.

Sincerely,

A handwritten signature in dark ink, appearing to read 'M Hagemann', with a long horizontal flourish extending to the right.

Matt Hagemann, P.G.

¹⁶ SDCDEH, January 6, 2009 phone conversation, Mr. Nasser Sionit.